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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,595	03/25/2004	Joseph M. Ferencz	1926A1	7249

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PPG INDUSTRIES, INC.
Intellectual Property Department
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Pittsburgh, PA 15272

EXAMINER	
WOLLSCHLAGER, JEFFREY MICHAEL	
ART UNIT	**PAPER NUMBER**
1732	

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,595	FERENCZ ET AL.	
	Examiner	Art Unit	
	Jeff Wollschlager	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/20/05; 7/23/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "is cooled by a temperature of about 10 °C to 35 °C prior to exiting the extruder." This is indefinite because this recitation has three reasonable interpretations. The first is that the cooling medium is at a temperature of 10 °C to 35 °C. The second is that the temperature of the melt mix is cooled to 10 °C to 35 °C before exiting the extruder. The third is that the temperature of the melt mix in the third portion of the extruder is cooled to a temperature that is 10 °C to 35 °C below the temperature of the melt mix in the second portion of the extruder. For the purposes of examination, all three reasonable interpretations were considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 6, 8-10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Jenkins et al. (U.S. Patent 4,041,115; issued August 9, 1977).

Regarding claim 1, Jenkins et al. (herein Jenkins) teach a method for manufacturing powder coatings (col. 7, lines 36-45) comprising a) feeding starting material to an extruder (col. 8, lines 15-18), b) shear mixing the starting materials at ambient temperature in a first portion of the extruder (col. 8, lines 19-21), and c) melt mixing the material in a second portion of the extruder (col. 8, lines 25-32). It is noted that ambient temperature is defined by the applicant in the disclosure as a temperature ranging between 13 – 35 °C. It is also noted that ambient temperature as defined by the applicant can be positively maintained by external cooling means.

As to claim 2, Jenkins further teaches cooling the melt mix in a third portion of the extruder (col. 8, lines 32-37).

As to claim 4, Jenkins teaches that the second portion of the extruder forms about 25% to 40% of the length of the extruder (col. 7, lines 57-60). The second portion is 280 mm long relative to a 772 mm long screw.

As to claim 6, Jenkins teaches the melt mix is cooled by a temperature of about 10 °C to 35 °C. Specifically, the cooling medium was at 16 °C (col. 8, lines 35-37).

As to claim 8, Jenkins teaches the melt is mixed at a temperature of 95 °C (col. 8, lines 29-32).

Regarding claim 9, Jenkins teaches an extrusion process for manufacturing powder coating compositions (col. 7, lines 36-45) from starting materials wherein the extruder is divided into three portions; an initial ambient portion, an intermediate heated portion, and a final cooled portion (col. 8, lines 15-39).

As to claim 10, Jenkins teaches the heated intermediate portion of the extruder forms about 35% to 40% of the length of the extruder (col. 7, lines 57-60). The second portion is 280 mm long relative to a 772 mm long screw.

As to claim 12, Jenkins teaches the heated portion of the extruder heats the starting materials to a temperature 40 °C to 140 °C higher than the ambient portion temperature (col. 8, lines 19-30). The ambient portion temperature was 16 °C and the heated portion temperature was 95 °C.

Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Jenkins et al. (U.S. Patent 4,041,115; issued August 9, 1977) as evidenced by Dictionary.com (http://www.dictionary.com).

As to claim 13, Jenkins teaches that the melt mix is subjected to focused heating (col. 8, lines 25-32). It is noted that the word focused, as defined by Dictionary.com means: "To direct toward a particular point or purpose". Clearly, the melt mixing taught by Jenkins is focused.

Claims 1, 2, 6-9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Furgiuele et al. (U.S. Patent 6,479,003; issued November 12, 2002).

Regarding claim 1, Furgiuele et al. (herein Furgiuele) teach a method for manufacturing powder coatings (col. 4, lines 46-50) comprising a) feeding starting material to an extruder (col. 11, line 65), b) shear mixing the starting materials at ambient temperature in a first portion of the extruder (col. 12, lines 3; Table I), and c) melt mixing the material in a second portion of the extruder (col. 12, lines 4-8). The zone S1 is neither heated nor cooled. As such, it shear mixes the material at ambient conditions.

As to claim 2, Furgiuele teaches a third portion of the extruder that cools the melt mix (col. 12, lines 8-23).

As to claim 6, Furgiuele teaches, the melt mix is cooled by a temperature of about 10 °C to 35 °C prior to exiting the extruder (Table I, columns 6-9 for different materials).

As to claim 7, Furgiuele teaches the powder coating is a thermosetting powder coating (col. 6, lines 46-55).

As to claim 8, Furgiuele provides an example teaching the melt mixed at a temperature of 70 °C to 150 °C (Table I, HDPE example).

Regarding claim 9, Furgiuele teaches an extrusion process wherein the extruder is divided into three portions; an initial ambient portion, an intermediate heated portion and a final cooled portion (col. 11, line 65 – col. 12, line 22; Table I)

As to claim 12, Furgiuele teaches a process wherein the heated portion of the extruder heats the starting materials to a temperature 40 °C to 140 °C higher than the

temperature of the starting material in the ambient portion (Table I, HDPE and LDPE examples).

Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Furgiuele et al. (U.S. Patent 6,479,003; issued November 12, 2002) as evidenced by Dictionary.com (http://www.dictionary.com).

As to claim 13, Furgiuele teaches that the melt mix is subjected to focused heating (col. 12, lines 4-8). It is noted that the word focused, as defined by Dictionary.com means: "To direct toward a particular point or purpose". Clearly, the melt mixing taught by Furgiuele is focused.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 5, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (U.S. Patent 4,041,115; issued August 9, 1977)

As to claim 3, Jenkins teaches the method of claim 1 as discussed in the 102(b) rejection above. Jenkins does not explicitly disclose that the first portion of the extruder forms about 25% to 40% of the length of the extruder. However, the example provided by Jenkins illustrates a first portion that is 15% of the length of the extruder (col. 7, lines

51-63) for the specific set of exemplary conditions. Jenkins further teaches that the screw sections are modified, as needed, based on conditions (col. 8, line 65 – col. 9, line 6). One of ordinary skill in the extrusion art would recognize that the employed physical length parameters of a screw are dependent on the materials being processed, the required production rates and the rating of the electric motor, for example. Therefore, the lengths of the different portions of the screw are a recognized result effective variable that would have been readily optimized as is routinely done in the art. As such, the invention as a whole is rendered obvious over the combined teaching of the prior art.

As to claim 5, Jenkins teaches the method of claim 2 as discussed in the 102(b) rejection above. Jenkins does not explicitly disclose that the third portion of the extruder forms about 25% to 40% of the length of the extruder. However, the example provided by Jenkins illustrates a third portion that is 45% of the length of the extruder (col. 7, lines 51-63) for the specific set of exemplary conditions. Jenkins further teaches that the screw sections are modified, as needed, based on conditions (col. 8, line 65 – col. 9, line 6). One of ordinary skill in the extrusion art would recognize that the employed physical length parameters of a screw are dependent on the materials being processed, the required production rates and the rating of the electric motor, for example. Therefore, the lengths of the different portions of the screw are recognized in the art to be result effective variables that would have been readily optimized as is routinely done in the art. As such, the invention as a whole is rendered obvious over the combined teaching of the prior art.

As to claim 11, Jenkins teaches the method of claim 9 as discussed in the 102(b) rejection above. Jenkins does not explicitly disclose that the first portion of the extruder forms about 25% to 32% of the length of the extruder. However, the example provided by Jenkins illustrates a first portion that is 15% of the length of the extruder (col. 7, lines 51-63) for the specific set of exemplary conditions. Jenkins further teaches that the screw sections are modified, as needed, based on conditions (col. 8, line 65 – col. 9, line 6). One of ordinary skill in the extrusion art would recognize that the employed physical length parameters of a screw are dependent on the materials being processed, the required production rates and the rating of the electric motor, for example. Therefore, the lengths of the different portions of the screw are a recognized result effective variable that would have been readily optimized as is routinely done in the art. As such, the invention as a whole is rendered obvious over the combined teaching of the prior art.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (U.S. Patent 4,041,115; issued August 9, 1977) as evidenced by Dictionary.com (http://www.dictionary.com)

As to claim 14, Jenkins teaches the method of claim 13 as discussed in the 102(b) rejection above, but does not specify that the residence time in the heating portion of the extruder is 1 to 30 seconds. However, residence time in a given zone of an extruder is a function of the material being processed, the particle size of the material, the melting temperature of the material, the dimensions of the screw, the

degradation properties of the material, the final use of the material, the rated load of the extruder motor, and the desired production rate. Therefore, residence time is an art recognized result effective variable that would have been readily optimized. As such, the invention as a whole is rendered obvious over the combined teaching of the prior art.

Conclusion

All claims are rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,703,005 to Allan et al. teaches a method of forming a deodorant or antiperspirant with an anticipatory three-zoned extruder. These materials form a powder coating when applied to the armpit of a human. For pertinent teaching see col. 18 lines 25-26 and 62 – col. 19 line 8; col. 31, lines 16 – 28; Example 1.).

Plastics Extrusion Technology by Allan L. Griff, copyright 1962, pages 318-319, teaches that extruders typically have three zones: a feed zone, comprising 0-75% of the length of the extruder; a compression zone, comprising 5-100% of the length of the extruder, and a metering zone, comprising 20-50% of the length of the extruder. These lengths are controlled depending on the material being processed as well as other criteria.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JW

Jeff Wollschlager
Examiner
Art Unit 1732

April 25, 2006

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER